

Determinants of Youth Unemployment in the Democratic Republic of Congo: An Empirical Analysis from 2001-2020

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Abstract

This article examines the determinants of unemployment in the DRC. The reduced nature of the sample, namely one country, is explained by the availability of data covering the period 2001-2020. The model inspired by the empirical literature is estimated by the ordinary least squares (OLS) method. After estimates by the OLS method, our econometric results reveal that the variables education, inflation, direct investment abroad, the population significantly explain the level of youth unemployment at the threshold of 1% and 5%. Education and foreign direct investment tend to increase the unemployment rate while population growth and inflation tend to reduce the unemployment rate. Our analysis of the determinants of unemployment appears to contribute to the literature on several levels. First, because few studies exist on the subject in the Democratic Republic of Congo. Compared to existing work, our study goes beyond methodologically by relying on more robust techniques such as ordinary least squares (OLS) and instrumental variables. Finally, the article will serve as an interpellation and awakening of the consciences of political actors on the intolerable degree of unemployment in the context of the DRC, and will refer to it when necessary in political or economic decision-making

Keywords: Unemployment, OLS, Education

Introduction

Unemployment is a social phenomenon which is constantly increasing, particularly among the young population, and the DRC is not spared by this scourge which affects all categories of society without exception, both boys and girls, graduates of universities than those without diplomas, qualifications or professional skills at all. As a result, we see a situation of imbalance between the supply of the labor market and the excessive number of graduates.

In Africa, most of the unemployed are under 25 years old. Poverty, insecurity, brain drain and social and political unrest are all dynamics linked to youth unemployment. The loss of income and taxes, waste and underutilization of human capacities and potential, the risk to social and political stability can be considered as direct costs of widespread unemployment among young Africans. Unemployed youth are easily drawn into crime and are more likely to foment social instability (ACBF: African Capacity Building Foundation, 2006).

In Africa, youth unemployment has worsened over time. In pre-colonial Africa, the traditional education system used local technologies and resources, and a vast network of adult role models, to socialize young people into the main economic activity, agriculture, which required the participation of the whole family, including younger children until they grow old enough to have their own fields or herd¹.

European colonialism undermined traditional African socio-economic systems to better respond to European economic needs and introduced the market economy, the production of export crops and the exploitation of mining and forestry products. This created a demand for wage labor. More stable and higher wages were the

¹ Emmanuel Nnadozie, Le défi du chômage des jeunes en Afrique, *Fondation pour le Renforcement des Capacités en Afrique*, février 2016, p.7

source of migrant labour, as young men left their homes to seek work far away in the cocoa, coffee and tea plantations, or in the copper, cobalt, diamond and gold mines².

Young Africans are increasingly better educated. It is estimated that 59% of 20-24 year olds will have a secondary education in 2030, a higher percentage than the current 42% (AfDB, OECD, UNDP and UNECA, 2012). However, even though the percentage of young Africans with secondary and higher education is increasing, many of them are unemployed or underemployed in the informal economy. Part of the problem is the mismatch between the skills that young job seekers can offer and those that employers need.

Despite recent advances in the fight against poverty, in sub-Saharan Africa 71% of young people live on less than \$2 a day (Kararach, Hanson and Léautier, 2011: p. 4). The situation is no better in North Africa, where in 2012 the employment-to-population ratio was 43%, well below the world average of 59.6% (ILO, 2014). In 2011, the International Labor Organization (ILO) estimated unemployment in North Africa to be the highest in the world, around 29.5% of the workforce (ILO, 2014).

The number of young people in precarious employment (young people likely to be employed, but who do not earn enough to live on their own and still live with their parents) is particularly high. Compared to population growth, the capacity to hire (both public and private) is simply too limited. During the period 2000-2007, the ILO estimated that the African working population increased by 21%. Even though jobs grew by 23% during the same period, in absolute numbers the labor force in Africa grew by 96 million, and jobs by only 53 million. With around 12 million new young people entering the labor market every year, much higher job growth is needed to reduce youth unemployment. The informal sector is the main source of employment in Africa. The World Bank (2007) estimates that the informal sector represents 80 to 97% of jobs created. Trade is the main activity of the sector and the main source of employment in peri-urban areas, with many street vendors³.

African youth unemployment is universally high and even higher for women, with some regional variations. For example, in 2009 youth unemployment in North Africa averaged 23.4%, compared to 48% in South Africa (AfDB, OECD, UNDP and UNECA, 2012a). In Egypt, 45.7% of young women are unemployed, compared to 17.9% of young men. Similarly, in Southern Africa, 51% of young women compared to 43% of young men are unemployed (Population Reference Bureau, 2013).

Young people with a higher level of education were more affected by unemployment in North Africa compared to sub-Saharan Africa. Barriers to youth employment include a lack of job creation, the vulnerability of young workers to layoffs when economic growth falters, the high cost of labor or unrealistic wage expectations from young people, discrimination (negative attitudes towards young workers without experience), difficult access to basic education (as well as the lack of skills due to limited professional experience and therefore restricted access to continuing training) and government policies that discourage work (AfDB, OECD, UNDP and UNECA, 2012).

Access to employment for young people remains a crucial problem in the DRC. According to the latest U-report survey by the United Nations Children's Fund (UNICEF), 78% of young people surveyed are unemployed. In addition, 25% of young people do not find job opportunities in their fields of study. Public administration, private companies and NGOs do not offer them enough job opportunities after their studies. For some jobs offered to young people, the requirement of years of experience remains an obstacle for them. To survive despite their diplomas, many young Congolese embark on resourcefulness⁴.

Rising unemployment leads to loss of income for individuals and reduced tax revenue for the state. From an economic point of view, unemployment can be considered as a deficit utilization of labour. According to the

² Emmanuel Nnadozie, *idem*, p.7

³ Emmanuel Nnadozie, *ibidem*, p.10

⁴ <https://www.radiookapi.net/2021/03/05/emissions/okapi-service/comment-lutter-contre-le-chomage-des-jeunes-congolais>

International Labor Office (ILO), the definition of unemployed, and even of unemployment, provides for four criteria: being of working age, being without work for even an hour during a reference week, being actively looking for a job in the previous month or having found one that starts at least three months from now; and be available to work within 15 days⁵.

The formal private sector of the DRC economy is relatively small. Apart from public companies, it is mainly made up of small and medium-sized Congolese companies and a small number of large companies belonging to foreign groups. Several of these large companies are active in the mining and telecommunications sectors. The poor business climate has prevented the private sector from creating jobs. Barriers to job creation include poor infrastructure and public services, limited human capital and access to finance, regulatory barriers, corporate monopolies, and uncertain land rights (Herderschee et al., 2012).

The weak development of the formal private sector and the lack of required professional skills limit job opportunities for young graduates. Indeed, less than one hundred out of nine thousand students leaving the university system each year manage to find decent work (Sumata, 2014). Thus the promotion of entrepreneurship seems to be the solution likely to break the infernal circle between unemployment, lack of income and poverty. Indeed, according to the theory of economic growth, advocated in particular by Schumpeter (1942), Aghion et al. (2004) and Aghion et al. (2014), the entrepreneur is the main agent in economic dynamics. Indeed, it remains the basis of innovations, sources of economic growth and job opportunities for many young people. For the UNDP (2017), the Congolese labor market remains too narrow and characterized by strong inequalities towards young people, the vulnerable and women.

The underemployment rate exceeds 50%. And the structure of employment remains dominated by the informal sector, which represents more than 88% of the total. These data reveal that the reduction of poverty and the improvement of the living conditions of the Congolese require the implementation of an economic policy that promotes strong growth, coupled with a satisfactory redistributive policy (UNDP-DRC, November 2017).

In the DRC, unemployment remains essentially an urban phenomenon affecting mostly young people aged 15-24, with an estimated rate of 15.85% against 9.37% for adults, according to a publication by the International Labor Office (ILO, 2017). In this context, young women remain more affected by this dramatic unemployment situation because their unemployment rate is around 20%, while that of young men remains at 12%. Young people are particularly affected by unemployment in proportions close to double the national average (Herdershee et al., 2012).

One of the major problems in analyzing unemployment in the DRC is the difficulty of making a relevant diagnosis of the number of unemployed and their vulnerability given the predominance of the informal sector in the Congolese economy. However, we can note the persistence of youth unemployment from 2002 to 2018, despite the prevalence of high economic growth rates. The youth unemployment rate was 7.79% in 2014 while the economic growth rate reached 9.47%. In 2018, the youth unemployment rate rose to 7.75% and the economic growth rate remained at 1.49%⁶.

Unemployment still persists in the DRC despite the phenomenal economic growth rates recorded over the past 17 years. This is mainly due to the fact that the Congolese economy is not diversified. Indeed, it remains blatantly dependent on the natural resource sectors. The latter provide employment to informal miners and loggers and a small portion of formal jobs in large companies. Informal work amounted to 1-2 million jobs in 2012.

⁵ Bardin BAHOUAYILA Statisticien économiste à la douane congolaise, CHÔMAGE AU CONGO : Un phénomène mal compris, Août 2016, p.2

⁶ Claude SUMATA, Emploi des jeunes et dynamique de l'entrepreneuriat en RD.Congo : une évaluation des mécanismes d'auto-emploi, *documents de recherche de l'observatoire de la francophonie économique d'rofe*, Professeur, Faculté des sciences économiques et de gestion Université Pédagogique Nationale Kinshasa/RD Congo, Avril 2020, p.3

The objective of this article is to examine the determinants of unemployment in the DRC. The reduced nature of the sample, namely one country, is explained by the availability of data covering the period 2001-2020. Our analysis of the determinants of unemployment appears to contribute to the literature on several levels. First, because few studies exist on the subject in the Democratic Republic of Congo. Compared to existing work, our study goes beyond methodologically by relying on more robust techniques such as ordinary least squares (OLS) and instrumental variables. The choice of the study period, which is 20 years, also appears to be an important element in this research compared to other past studies. Finally, the article will serve as an interpellation and awakening of the consciences of political actors on the intolerable degree of unemployment in the context of the DRC, and will refer to it when necessary in political or economic decision-making. The article is structured around 3 sections. The first presents a selective review of the literature. The second presents the model and the estimation technique. The third analyzes the results.

1. Literature review

To account for the factors determining the degree of unemployment in the DRC in the literature, we present on the one hand the theoretical foundations and on the other hand a synthesis of the empirical work.

1.1. Theoretical approach to unemployment: a synthesis of theoretical work

The lack of professional experience, a weak will to work, or phenomena of discrimination can lead to the unemployment of certain populations, especially young people. The choice of work is displayed by the ability of the individual to accept undesired positions, to compensate for the economic obstacles to his employment by accepting certain constraints such as mobility. These far from complete clarifications can be refined by the various theoretical currents relating thereto.

According to the classics and the neo-classical standard, unemployment in the youth market can have a Voluntary character. do not agree to work at equilibrium real wage rates (Perrot, 1992). From this explanation, unemployment relates to the rationality of economic agents who mobilize their time in search of a better possible job.

This is usually the case of young people maintained by their family or married women whose husbands work, people who refuse to work because the market does not offer them an efficient wage. This is also the case of people who, instead of accepting informal employment, remain voluntarily in long-term unemployment in order to pursue research in the formal sector where the conditions of employment are more advantageous (Harris and Todaro, 1970 ; Boudarbat, 2006).

These people will be even more affected by unemployment because of their too high reservation wages. In cohesion with the theory of job prospecting (Stigler, 1962), this reservation wage determines whether it is more advantageous for the worker to enter the labor market. As long as the marginal benefit he derives from the job offers offered to him remains less than the marginal benefit he has from remaining unemployed, the worker will remain unemployed while waiting for better offers.

From the first chapter of *The General Theory of Employment, Interest and Money* (1936), Keynes made clear his disagreement with the conclusions of neoclassical theory which governed "the economic thought of ruling and academic circles". over the past hundred years. He operates a significant methodological break with the economists he calls "classical": he proposes to study the short-term functioning of the economic system as a whole and all in an uncertain universe. Keynes thinks in the opposite direction and affirm that the economy works in underemployment where unemployment is involuntary. This situation simply designates the unemployed who would agree to work at the current wage rate. Keynes gave this expression a different, much narrower definition. Involuntary unemployment is, according to him, unemployment which finds its origin in the insufficiency of the demand for goods.

As early as the 1960s, the champion of human capital theory (Mincer, 1974; Becker, 1975; Thuma, 1985) argued that education is the most productive investment for socio-economic development strategies and for individuals' career paths. The differences in insertion are explained by the differences in the educational investment according to the theory of human capital (Becker, 1975). Obtaining a diploma thus corresponds to

the acquisition of a stock of knowledge and objective skills likely to be used for employment and to make the holders more productive or even more efficient on the labor market.

The theory of human capital explains the interest that young people would have in increasing their level of training and having their achievements recognized through the diploma system.

This theoretical corpus makes it possible to unambiguously shed light on youth unemployment in an economy. The accumulation of this capital is done by training in employment (specific human capital), by education (general human capital) and by improving the state of health (Becker, 1962). The lack of substitution between the specific (experience or technical skill) and general (diplomas) components is believed to be the cause of unemployment. Young graduates arrive on the market with a handicap linked to the lack of professional experience (Carmeci and Mauro, 2003). Faced with the preference strategy of companies that place more emphasis on experience, they find themselves mostly unemployed despite their diploma. This is a bit ironic since gaining technical experience is tied to having a job. This situation constitutes a vicious circle for the majority of young people in a situation of first integration.

On the other hand, the spatial inadequacy inherent in residential segregation (Houston, 2005; Gobillon and Selod, 2007; Duguet et al., 2008) would be at the origin of unemployment according to the theory of geographical mobility (Frank, 1978). Due to the constraints associated with mobility, workers tend to position their research on the local market rather than on the global market. The fact that highly skilled workers face less favorable employment opportunities seems to be the main disadvantage of small local markets.

The theory of discrimination in hiring (selection and recruitment) can improve the understanding of youth unemployment. The literature analyzing the interactions between the phenomenon of discrimination and employment can be grouped into two major schools. The first promoted by Becker (1957) stipulates that certain groups of individuals are under-represented in the labor market because of the desire expressed by certain employers not to mix with these groups (Viprey, 1997; Noël, 2000). This is discrimination in terms of taste.

The second stream of analysis developed by Arrow (1972), Akerlof (1984) then Aigner and Cain (1977) takes into account the intentional discrimination that resides in the beliefs (stereotypes) of employers with regard to certain categories of individuals. In relation to individual characteristics, discrimination can come from the behavior of men or adults who prefer to work with colleagues of the same sex or the same age rather than with women or young people (Benjamin et al., 2007). Akerlof and Kranton (2000) point out that discrimination on the part of men would make it possible to preserve masculine identity when women want to interfere in so-called men's jobs. Youth unemployment would result from discrimination emanating from socially constructed negative representations of youth or gender.

The filter theory (Arrow, 1973; Spence, 1973) in reference to the informational uncertainty in which the employer finds himself when he recruits an employee makes it possible to understand the exclusion of young people on the labor market. This theory is based on the idea that discriminatory criteria act for the employer as filters allowing him to make a selection among job candidates.

The higher the number of applicants, the more recourse to these screenings will be used by employers. The latter define a certain number of active criteria (sex or age) as a priority which, without being the most important, make it possible to proceed economically with selection or recruitment.

Okun's law in economics, was proposed by Arthur Okun in 1962. It describes an empirical linear relationship between the growth rate (of GDP) and the variation in the unemployment rate. Below a certain growth threshold, unemployment increases; above this threshold, it decreases, with constant elasticity. This

law suggests an inverse relationship between growth and the unemployment rate. If the growth rate increases, the unemployment rate decreases and vice versa⁷.

Highlighted (Alban William Phillips, 1958), the Phillips curve is a curve illustrating a negative (i.e. decreasing) empirical relationship between the unemployment rate and inflation or nominal wage growth rate. This relationship is explained by the fact that beyond a certain level of unemployment, employees are no longer in a strong position to demand a wage increase; productivity gains are then shared in favor of the company. So employees have more power when there is a low unemployment rate.

An avenue that seems interesting to explain the importance of the risk that young people incur of falling into unemployment is provided by the so-called “insider-outsider” theory. The heart of the theory lies in the observation that companies incur a cost when they hire or fire staff. When this cost is high enough, the labor market splits in two. On the one hand, the “insiders”, who are well-established workers, whose jobs are protected by the high cost of dismissal; on the other, the “outsiders”, whose archetype is the unemployed or the young person who, fresh out of the education system, is making his debut on the labor market.

1.2.The determinants of unemployment in the DRC: a synthesis of empirical work

Makouezi, C. and Ngobila, R. (2022) conducted a study on the Determinants of Youth Employability in Congo. To achieve this objective, they combined two methodological approaches: the microeconomic approach and the macroeconomic approach. The microeconomic approach highlights the microeconomic determinants from binary and multinomial logit models applied to the survey data of the National Institute of Statistics while the macroeconomic approach estimates the macroeconomic determinants using the autoregressive models applied World Bank aggregate data. The results show that the employability of young people depends on both microeconomic and macroeconomic factors. Consider microeconomics, education, individual gender, age; place of residence and affiliation to a work organization are the main determinants of employability. At the macroeconomic level, analyzes have shown that GDP and gross fixed capital formation as well as imports are determinants of youth employability.

Issoufou Njifen (2015) to conduct research on Characteristics and determinants of youth unemployment in Cameroon: the preponderant role of diploma and sex. Using a Logit estimation model and making good use of microdata from the Second Employment and Informal Sector Survey, this study goes beyond simple logistic analysis by adopting Blinder decomposition techniques and Oaxaca to analyze the determinants of the unemployment gap according to gender and qualification. The results reveal in particular the determining role of the level of education, the female sex and the place of residence in the aggravation of youth unemployment in Cameroon. However, the analysis invalidates the hypothesis of gender discrimination in hiring when the differences in productivity between graduates and non-graduates, the advantages associated with the graduate as well as the disadvantages associated with the non-graduate explain the disparities in unemployment between these last two groups.

MUHAMMAD SHAHID At. al analyzes the determinants of unemployment in Pakistan over a period 1976-2012 by examining the empirical relationship between unemployment, population, foreign direct investment, gross domestic product, inflation and external debt. It is hypothesized that these factors exert a strong impact on the unemployment rate in Pakistan's economy. The Autoregressive Distributed Lag (ARDL) approach was applied to test the determinants of unemployment. The empirical results reveal that gross domestic product, population, inflation and foreign direct investment flows are important determinants of unemployment in Pakistan in both short and long term. The Phillips curve exists in Pakistan in both short and long term

Gaber H. Abugamea the determinants of unemployment in Palestine over the period 1994-2017. It employs OLS Econometric Analysis to examine the relationship between unemployment and variables of GDP,

⁷ Arthur Okun, *Potential GNP: Its measurement and significance*, American Statistical Association, *Proceedings of the Business and Economics Section*, 1962, pp 98-103

inflation, labor force, foreign trade, and labor movement restrictions. The empirical results show variables of GDP, inflation, labor, foreign trade, as macroeconomic determinants, and restrictions on labor movement, as institutional movement, are the main determinants of unemployment in Palestine. While GDP had a significant impact on unemployment with a negative effect, we find that inflation, labor force and labor movement restrictions had a significant impact on unemployment and with a positive effect. Also, foreign trade has not had a significant impact on unemployment.

This study aims to analyze the relationship between the Gross Enrollment Rate, the number of poor people and the GDP Growth Rate to the Open Unemployment Rate in Banten. The analysis method used in this study is panel regression data with fixed effects model estimation which is processed using EViews 10 statistical software. The data used in this study are secondary data from Badan Pusat Statistik (BPS), taking annual data for each district of Banten Province from 2011 to 2018. The results of this study indicate that the GDP growth rate significantly affects the registered unemployment rate, but the gross enrollment rate and the number of poor people does not significantly affect the reported unemployment rate in Banten.

Nur Feriyanto (2018) analyzes the determinants of unemployment in the special province of Yogyakarta (DIY), partially and simultaneously using panel data regression analysis with data from five regencies/city from 2010 to 2015. The results indicate wage partially has a negative and significant impact on unemployment, but demographic variables partially have a positive and significant impact on DIY regency/city unemployment. Variables of education and economic growth partially do not have positive and significant effects on unemployment (UNEM) in DIY. Meanwhile, simultaneously the Education (EDU), Wage (WG), Population (POP) and Economic Growth (EG) variables have a significant effect on unemployment in the province.

Bechir N. Bouzid (2016), conducts an analysis on the Dynamic Relationship between Corruption and Youth Unemployment, using a systemic GMM approach that simultaneously takes into account the dynamic effect between perceived corruption among civil servants and the rates of youth unemployment, the article finds that after controlling for various macroeconomic and institutional factors, the development of corrupt practices tends to increase the youth unemployment rate and educated job seekers who, in turn, contribute to perpetuate these illegal practices by forcing them to bribe rent-seeking officials in order to obtain employment.

2. Methodology

Finally to explain the determinant of youth unemployment in the DRC, the methodological approach and the model were inspired by the work of Abugamea, Gaber (2018) when he wanted to study the determinants of unemployment: Empirical evidence from Palestine.

The estimation model is therefore given by: $Cho = f(Educ, croi, infl, ide, pop)$

So we have a model like this:

$$y_i = \alpha + \beta_1 X_i + \beta_2 X_i + \beta_3 X_i + \beta_4 X_i + \beta_5 X_i + e_i \text{ Avec } i = 1 \dots 5$$

With y_i : Dependent variable, X_i : independent variable, e_i : error term

By replacing our study variables in the model equation, we have the following results:

$$Cho = \alpha + \beta_1 Educ + \beta_2 croi + \beta_3 infl + \beta_4 ide + \beta_5 pop + e_i$$

2.1. Choice and definition of variables

2.1.1. Dependent variable: The youth unemployment rate

Youth unemployment refers to the share of the labor force aged 15-24 without work but available for and looking for work (modeled estimate from the International Labor Organization).

2.1.2. Independent variable

Education (Educ): The vision developed in the work of Laing, Palivos and Wang (1995), or more recently Burdett and Smith (2002), emphasizes the existence of a virtuous circle between education and employment : first of all, when the employment prospects of workers are favourable, this encourages their educational investment; in return, the presence of a highly educated workforce promotes job creation. It is possible that unemployment generates incentives to educate themselves, because by educating themselves individuals increase their chances of being in a job. Alongside the wage return to education (a higher salary) traditionally highlighted in the theory of human capital, there is undoubtedly a return to employment (a higher probability of being employed). We discuss the possibility of accounting for the European experience by taking into account this second type of educational return. There is a positive relationship between education and employment. The chosen variable is Enrollment rate at tertiary level (in %).

Growth rate (CROI): To reflect the overall economic situation of the country, we use the growth rate of real GDP. We logically expect that positive (and high) values for this indicator will be associated with a lower unemployment rate, particularly among young people, since unemployment among this population is closely dependent on changes in the economic situation (Choudhry , Marelli and Signorelli, 2012; Eichhorst et al., 2013; Banerji et al., 2014; Brada, Marelli and Signorelli, 2014; Bruno, Marelli and Signorelli, 2014; Hutengs and Stadtmann, 2014).

Inflation (INFL): with the consumer price index as a proxy. the Phillips curve is a curve illustrating a negative (i.e. decreasing) empirical relationship between the unemployment rate and inflation or nominal wage growth rate. This relationship is explained by the fact that beyond a certain level of unemployment, employees are no longer in a strong position to demand a wage increase; productivity gains are then shared in favor of the company. So employees have more power when there is low unemployment

Foreign direct investment (FDI): Foreign direct investment is investment that an institutional unit resident in one economy makes for the purpose of acquiring a lasting interest in an institutional unit resident in another economy and exercise significant influence over its management in the context of a long-term relationship. The study assumes that FDI has a negative relationship with unemployment.

Population (POP): with the population growth rate as a % of GDP as an indicator. The annual population growth rate for year t is the exponential mid-year population growth rate from year t-1 to t, expressed as a percentage. Population is based on the de facto definition of population, which counts all residents, regardless of legal status or nationality. The increase in population leads to an increase in unemployment.

3. Data and sources

The data comes from various sources. They relate to a country the Democratic Republic of Congo between 2001 and 2020. The data on the youth unemployment rate come from the database of the Federal Reserve Economic Data. Data on the growth rate, inflation, foreign direct investment, population growth rate, come from the World Bank data base. Data on education are from World Development Indicators (WDI, 2019). The definition of explanatory variables and data sources are listed in Table 1. The choice of period, 2001 to 2020, is dictated by data availability obtained. Descriptive statistics Table 2. Table 3 shows the different correlations between the variables used.

Table 1. Variable specification

Explanatory variable	Description of variables	Sources
Education	Enrollment rate at tertiary level (in %)	(WDI, 2019)
Croissance	Growth rate (% annuel)	(the world bank data)
Inflation	Inflation, prix à la consommation (% annuel)	(the world bank data)
Investissement	Foreign direct investment (% du PIB)	(the world bank data)
Population	Croissance de la population (% annuel)	(the world bank data)

Source : author

Table 2. Descriptive statistics

statistics	CHO	EDUC	CROI	INFL	IDE	POP
Mean	7.794000	6.655638	5.644453	6.425574	5.013962	3.276611
Median	8.436000	6.810700	6.225894	2.800000	3.075079	3.293967
Maximum	9.745000	8.264580	9.470288	17.30138	12.71601	3.337676
Minimum	5.243000	4.493420	1.735423	0.744199	-1.304135	3.142652
Std. Dev.	1.242636	1.090906	2.232066	6.290792	3.883271	0.059923
Skewness	-0.749691	-0.699143	-0.235077	0.762223	0.591110	-0.858755
Kurtosis	2.626670	3.029079	2.201803	1.906705	2.434099	2.706396
Jarque-Bera	1.492202	1.222531	0.536352	2.199519	1.073679	1.897528
Probability	0.474212	0.542664	0.764773	0.332951	0.584593	0.387219
Sum	116.9100	99.83457	84.66679	96.38362	75.20943	49.14917
Sum Sq. Dev.	21.61802	16.66105	69.74968	554.0369	211.1171	0.050270
Observations	15	15	15	15	15	15

Source : author

Table 3. Matrice of correlation

	(1)	(2)	(3)	(4)	(5)	(6)
(1) CHO	1					
(2) EDUC	0.76381	1				
(3) CROI	-0.13244	0.17787	1			
(4) INFL	-0.72556	-0.4415	0.18304	1		
(5) IDE	-0.22591	-0.11401	0.50718	0.56839	1	
(6) POP	-0.15086	0.36205	0.61156	0.15492	0.37255	1

Source : author

4. Results and discussion

The estimation result by the ordinary least squares method shows that only four variables including education, inflation, foreign direct investment, population significantly explain the level of youth unemployment at the threshold of a 1% and a 5%. Education increases unemployment to 84% and this can be explained by the fact that most young graduates leave the academic course without any professional experience, yet recruiters place a lot of importance on professional experience on the vacant position available. They know that training has a cost and if they recruit a person who already has experience, this person will be able to adapt easily. Inflation, on the other hand, tends to reduce the unemployment rate to 10%. These results confirm the Philips curve theory which states that there is a decreasing relationship between the unemployment rates. This relationship is explained by the fact that beyond a certain level of unemployment, employees are no longer in a strong position to demand a wage increase; productivity gains are then shared in favor of the company. So employees have more power when there is a low unemployment

rate. And so when unemployment increases, inflation decreases by 10%. Foreign direct investment increases the unemployment rate to 11%. This is explained by the fact that there are many restrictions on investment in the DRC. The business climate is far favorable with too many taxes. This pushes investors to always stay in the mining and telecommunications sector, forgetting other sectors using a large volume of labor and thus reducing unemployment.

Population growth reduces unemployment tends to reduce unemployment in the DRC with a negative coefficient of -8.538723. This can be explained by the fact that in recent years we have seen a demographic slowdown. The population should not have increased following a geometric progression. The growth rate does not significantly explain the unemployment rate in the DRC but has a negative coefficient of -.0549855. As these two variables have been integrated in the same order, we will investigate whether there is a possible short or long term relationship between these two variables.

Table 4 Results of estimation

&Dependent Variable: CHO				
Method: Least Squares				
Date: 05/30/22 Time: 14:27				
Sample (adjusted): 6 20				
Included observations: 15 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.54312	7.334694	4.164197	0.0024
EDUC	0.845153	0.120723	7.000789	0.0001
CROI	-0.054986	0.063764	-0.862328	0.4109
INFL	-0.102536	0.022933	-4.471140	0.0016
IDE	0.114310	0.037391	3.057162	0.0136
POP	-8.538723	2.390019	-3.572659	0.0060
R-squared	0.937841	Mean dependent var		7.794000
Adjusted R-squared	0.903308	S.D. dependent var		1.242636
S.E. of regression	0.386401	Akaike info criterion		1.225292
Sum squared resid	1.343752	Schwarz criterion		1.508512
Log likelihood	-3.189693	Hannan-Quinn criter.		1.222276
F-statistic	27.15805	Durbin-Watson stat		2.346775
Prob(F-statistic)	0.000036			

Source: Author from Eviews 10

Conclusion and economic policy implications

This article has examined the determinants of unemployment in the DRC. The reduced nature of the sample, namely one country, is explained by the availability of data covering the period 2001-2020. The model inspired by the empirical literature is estimated by the ordinary least squares (OLS) method. Our econometric results reveal that the variables education, inflation, foreign direct investment, population significantly explain the level of youth unemployment at the threshold of 1% and 5%. Education and foreign direct investment tend to increase the unemployment rate while population and inflation tend to reduce the unemployment rate. Four main implications for economic policy can emerge from the results obtained to

reduce the youth unemployment rate in the DRC: (i) Improve the Congolese education system by promoting access for learners to internships in order to acquire sufficient experience in professional environment, (ii) encourage the creation of businesses by young people (entrepreneurship), (iii) improve the business climate in order to attract foreign investors, (iv) promote investments with high labor capacity.

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